Leading Edge

Aug-Sept 2005

Air Force Materiel Command

Gen. Bruce Carlson takes command

Responsive satellite capability

RoadRunner tests step forward

Deployment Afghanistan

Special feature: War on Terrror

Making the Cut

Computer Numerical Control Shop machinists Ricky Harris, left, and Paul Spurlock at the Oklahoma City Air Logistics Center, Okla., can program the CO2 laser to precisely carve small or large engine parts quieter, cleaner and safer than many other methods. “I know of no other CO2 Laser in the Air Force,” said Alan Casey, shop supervisor.

The Trumph CO2 Laser uses different combinations of carbon dioxide, helium, nitrogen and oxygen to cut through different metals. Before this technology was available, most of the parts were cut out by hand using a band saw. Those cuts could be made with an accuracy of one eighth of an inch. “It could take a day to cut two parts,” Mr. Harris said. “With this we can cut 50 of them in the same amount of time, and they are all exactly the same.” (AF photo by Margo Wright)

http://www.afmc-pub.wpafb.af.mil/HQ-AFMC/PA/leading_edge/index.htm

AUG-SEPT '05

Volume 47 Number 7

LEADING EDGE

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This funded magazine is published monthly for the people of Air Force Materiel Command.
Contents are not necessarily the official views of, nor endorsed by, the U.S. Government, the Department of Defense or the Department of the Air Force.
Editorial content is coordinated and prepared by the HQ AFMC Office of Public Affairs editorial and design staff.
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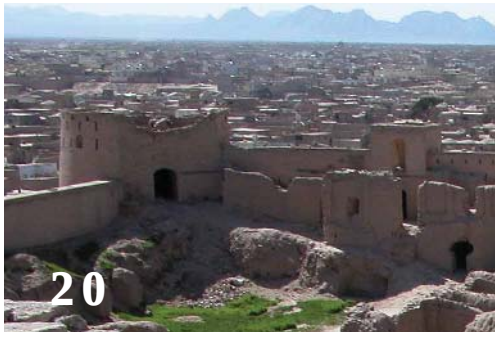


Cover photograph: Al Bright

Gen. Bruce Carlson receives the colors and thus command of Air Force Materiel Command, Aug. 19, from Air Force Chief of Staff Gen. John P. Jumper. AFMC Command Chief Master Sgt. Jonathan E. Hake stands in the background. Moments later, General Jumper presided over a retirement ceremony for Gen. Gregory S. Martin, former AFMC commander, relieving him of command.

Gen. John P. Jumper, Chief of Staff of the Air Force, Chief Master Sgt. Jonathan Hake, AFMC Command Chief Master Sgt., Gen. Bruce Carlson, AFMC commander and Gen. Gregory S. Martin, former AFMC commander participate in a change command ceremony Aug. 19 at the National Museum of the U.S. Air Force in Dayton, Ohio. (AF photo by Al Bright)

Carlson prepares to tackle command challenges

New commander 'excited' to join AFMC community

By Kathleen A.K. Lopez
AFMC Public Affairs
Wright-Patterson AFB, Ohio

Gen. Bruce Carlson assumed command of Air Force Materiel Command from Gen. Gregory S. Martin, Aug. 19, at the National Museum of the U.S. Air Force in Dayton, Ohio.

General Carlson, who previously commanded the 8th Air Force, Barksdale Air Force Base, La., pinned on his fourth star in a private ceremony attended by family and close friends earlier in the morning. Immediately following the change of command, General Martin retired after 35 years of service.

"This is a pretty special day for a country boy from Minnesota," General Carlson said. "I had a lot of help along the way."

People to whom the general said he owed a special debt of gratitude, included his mother, who taught him the value of love, his father, who taught him about leadership, his brother, his sister, his wife Vicki, and their children, all of whom were present at the ceremony, as well as other family members.

"I am excited to join such a vibrant community of military and civilian Airmen," General Carlson said. "I am eager to work with you to improve our core missions of technology, acquisition support and sustainment."

More than 600 people gathered in the Museum's Modern Flight Gallery, surrounded by static displays of the YF-22, B-52 Stratofortress and F-117A Nighthawk, as well as the Predator Unmanned Aerial Vehicle, Global Hawk UAV and Hell Fire Missiles. General Carlson's daughter-in-law, Catherine, sang the National Anthem. The Air Force Band of Flight accompanied six of its vocalists, who sang the Air Force Hymn and the Air Force Song.

Air Force Chief of Staff Gen. John P. Jumper, presiding officer, lauded both Generals Martin and Carlson and their families for their accomplishments. Also included in the Washington delegation were acting Secretary of the Air Force, Pete Geren, and Chief Master Sergeant of the Air Force Gerald R. Murray.

"Today is a proud day for the Air Force Materiel Command; it's a proud day for our Air Force," General Jumper said. "It's an old saying that you can tell how important you are by who shows up at your going away and your major events. Based on this audience, I think we can be very proud of Speedy (General Martin) and Bruce."

General Jumper reflected upon his early days as Air Force chief of staff. He recalled the challenges of technology as well as development of the work force.

"AFMC has come probably a longer way in our journey of transformation than any other command," he said. "I remember when I first took over as chief, (General ret.) Les Lyles (General Martin's predecessor) came to see me and we laid out a path that challenged technology and efficiency in our centers and the way we led our technical workforce, both civilian and military. Speedy has taken that challenge and he has taken it to new heights. He's done an absolutely outstanding job of it."

General Jumper presented the Air Force Organizational Excellence Award to General Martin for Headquarters AFMC. The award not only recognized the headquarters for its outstanding leadership and support during Operations Enduring Freedom and Iraqi Freedom but also for such contributions as a command-wide reorganization, program executive office restructuring and depot and business transformation.

Two other awards were presented before General Martin's retirement.

General Martin's wife, Wendy, stood by her husband's side as they both were presented with his own Commander's Award for Excellence. The award, given in the past purely at General Martin's discretion to AFMC Airmen who especially excelled, was the headquarters' surprise "thank you" to the general for outstanding leadership. Their children, Tracie, Todd and Tyler, as well as Mrs. Martin's brother, Mr. Walter Bliss, bore witness to the surprise. Mrs. Martin also received the Exceptional Service Award.

General Martin expressed his admiration for the people of AFMC by saying, "This has been the most satisfying and rewarding assignment of my career." As he closed, he said, "Ask yourselves if we are worthy to perform this mission," and then stepping away from the microphone, he yelled, "Yes!"

The new commander said:

"The AFMC mission is huge, and the successes the people of this command have achieved in carrying out that mission are remarkable. Your example inspires me."

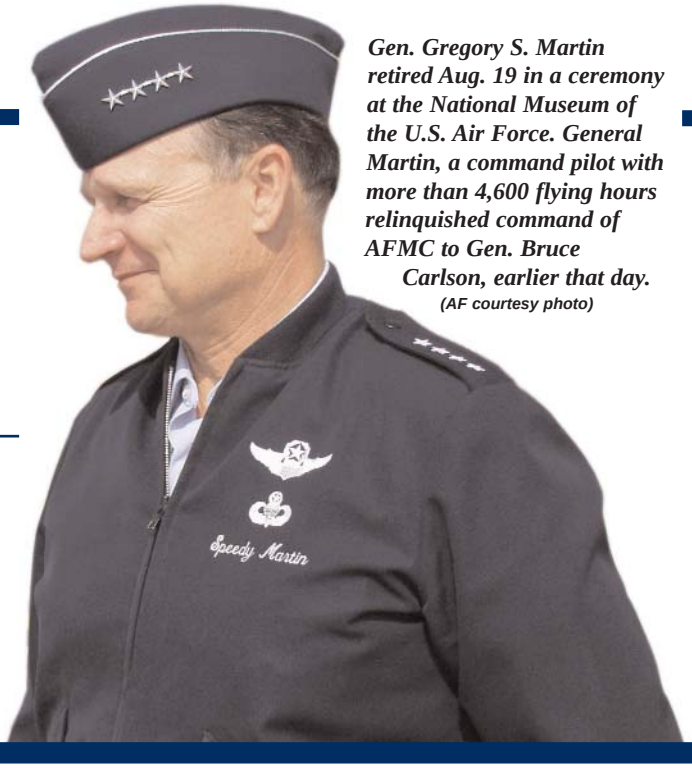
"My job will be to lead and support you, work with you and for you as we expand the legacy of continuous improvement, transformation and change for the good."

- General Bruce Carlson

Gen. Bruce Carlson and his wife, Vicki, look into a crowd of more than 600 people who attended the Aug. 19 change of command ceremony at the National Museum of the U.S. Air Force. General Carlson presented Mrs. Carlson with flowers, thanking her for the support she has given him during his career. General Carlson was promoted in an earlier ceremony that morning. (AF photo by Al Bright)

Martin SALUTES COMMAND

Commander says good-bye to transforming command, Air Force



Gen. Gregory S. Martin retired Aug. 19 in a ceremony at the National Museum of the U.S. Air Force. General Martin, a command pilot with more than 4,600 flying hours relinquished command of AFMC to Gen. Bruce Carlson, earlier that day.
(AF courtesy photo)

As I prepared to retire from our United States Air Force after 35 years of service, I want each of you to know that my most rewarding and fulfilling assignment has been that of AFMC Commander where I had the opportunity to work with nearly 80,000 of the finest professional Airmen — military and Air Force civilian — I've known over the course of my career. You have exceeded every one of my expectations, and you have accomplished more than I could ever imagine.

Achieving the Vision

To be a valued team member … of the world's most respected Air and Space Force. For two years now that's been our vision, and thanks to each and every one of you, I believe we're achieving the vision every day. The proof is in our performance:

Air Force Level Awards in Past Year: 97; DoD and Above Awards in Past Year: 15; New Science and Technology Vision Adopted by Air Force; AFMC Inputs Shaped the Defense Acquisition Performance Assessment Project; Critical Test and Evaluation Infrastructure Supports Air Force, DoD, National Level Programs; Unprecedented Depot Performance — Aircraft Deliveries 99 percent on time Year to Date.

At a CORONA Conference in July, where Air Force senior leaders met to discuss key issues, our Chief of Staff, Gen. John Jumper, took the time to specifically talk about AFMC — our contributions, our performance, our effectiveness, our impact on all other major commands! In

AFMC leadership accomplishments

From completing a crucial missile warning system for the C-17 in weeks instead of months to fielding a 500-pound Joint Direct Attack Munition in 52 days for deployment to Iraq, AFMC's accomplishments during General Martin's tenure are too numerous to list in this space. Many of the command's accomplishments, however, resulted from his personal attention and direction. Some of the most significant include those outlined here.

Aug. 2003: *Gen. Martin takes command of Air Force Materiel Command, Wright-Patterson AFB, Ohio.*

Implements PEO restructure: *Product Center commanders become program executive officers, unifying two previously separate roles to improve acquisition and sustainment processes.*

Realigns installation commander duties to wings: *Moves host installation duties from Center commander to wing commander level, allowing Center commanders to focus on their primary roles.*

Articulates succinct strategic principle: *"War-winning capabilities... on time, on cost" becomes foundational idea on which AFMC's strategic plan is built.*

Reorganizes command: *Transforms System Program Offices and large directorates into 128 new named systems and sustainment wings, groups, squadrons, consistent with other Air Force organizations to facilitate realistic funding decisions and improve communications with customer commands.*

the eyes of our Chief of Staff we are … a valued team member of the world's most respected Air and Space Force!

A Word About Our AFMC People

In my most recent Commander's Log I highlighted an anonymous letter received from one of our Air Force civilians indicating that "… too many people within the Command treat people as a means to achieve their personal goals and do not afford individuals the dignity and respect all individuals are due." That letter is troubling to me, but even more troubling were the multitude of responses I received confirming that the anonymous letter presented a fairly accurate picture of the normal AFMC work environment! I think you'll all agree that we cannot tolerate that kind of work environment … and each and every one of us must become a part of the solution. Let me share some thoughts.

Treating each other with mutual respect and dignity is fundamental to individual achievement and our effectiveness as a team.

When one of our people feels as reported by the anonymous writer, whether perceived or real, we have failed as leaders.

True leaders inspire their people to perform, and they do that by getting their people involved — soliciting their feedback, advice, and ideas in day-to-day operations … using their experience and expertise … recognizing their contributions.

Effective leaders create an environment where their people can excel and achieve. Conversely, the environment described by the anonymous writer does exactly the opposite. It's de-motivating and will prompt people to leave the organization rather than put all of their effort on the line to support the organization's goals, its people, and its mission.

As Air Force leaders we must always treat our people with Trust — that we trust our people and are trustworthy ourselves … Dignity — that we never compromise a person's dignity regardless of the situation … Hope — that we always ensure our people feel a sense of hope no matter the challenge.

I believe very strongly that our United States Air Force will dominate the world's air forces in the 21st Century … and the men and women of AFMC will play a huge role in making that happen. We have the best technology, the best equipment, the best operational training, but the reason we will dominate is because we have the best people — most competent, dedicated, disciplined, experienced, and professional Airmen in the world. Never forget that!

You know, 35 years is a long time. But when you consider my four years at the USAF Academy and the fact that my father served for 35 years as a career Air Force officer, then you see I've actually been a part of this great United States Air Force for my entire life. I consider that lifetime association to have been a high privilege and honor, and I'm very thankful. Our Air Force is a wonderful institution made up of honest, dedicated, smart, disciplined, professional people who care deeply about what they do in support of our nation. Nowhere have I seen that fact demonstrated more than with the people of AFMC.

Continue to take care of yourselves, your people, and your families. Despite the personal satisfaction I've enjoyed as a result of my long Air Force career, my proudest thoughts are for Wendy, my high-school sweetheart and wife of 34 years, who has been such a devoted partner, mother, and Air Force supporter despite the most severe medical condition imaginable, which she has now overcome, and which she has used for the past 18 years to help other Air Force and family members cope with serious illness.

She inspired me to heights I could never have achieved without her by my side.

Finally, as I've often said, nothing is more important to me personally than the safety and well being of our AFMC people and their families.

I salute you … the men and women of AFMC … and the finest professionals I have had the privilege of serving alongside.

Be safe, be well … and let's all be good Wingmen!

Returns capital to Air Force: *The Depot Maintenance Activity Group achieves best net operating result in 10 years; $570 million returned to Air Force for operational missions.*

Champions work-place wingmen: *Directs commanders and supervisors to establish monthly wingman calls to promote awareness that coworkers sometimes need help to cope with personal difficulties.*

Gets AF civilians group time-off awards: *Convinces Air Force that civilians, like active-duty Airmen, should be eligible for group time-off awards when an organization meets established goals and standards within a given time period.*

Creates civilian orientation course: *Directs that a course of study be developed to teach new civilian employees Air Force and command history, culture, customs and courtesies, core competencies and core values.*

Initiates junior force development: *Surveys young active-duty Airmen/civilians to identify shortcomings in professional training and growth opportunities and begins improvements.*

Establishes interchangeable leadership: *For the first time ever, civilian directors and military commanders are interchangeable in leadership positions, a concept being adopted in other commands.*

Depot production rates hit all-time high: *Of all aircraft entering programmed depot maintenance at AFMC's three air logistics centers, 99 percent were returned to operators on time, compared to 61 percent just three years previously.*

Establishes civilian wellness benefits: *Contracts for free health screenings and gains Air Force approval for civilians to use three hours of work time weekly for fitness activities.*

Group adopts engine workload early

TINKER AIR FORCE BASE, Okla. — The successful completion of the first module of the F100-PW-229 engine workload marks a major milestone for the Oklahoma City Air Logistics Center.

The F100-PW-229, the most advanced version of the F100 family of engines, powers the Air Force's F-15 and F-16 fighters.

The 76th Propulsion Maintenance Group is scheduled to complete 100 percent transition of initial operating capability for the inlet fan and fan drive turbine in August because the qualification for the first two of four modules is complete. This was achieved by good planning and a dedicated work force, which allowed the center to meet the requirements and receive training and qualification of the inlet fan in December and the fan drive turbine at the end of May.

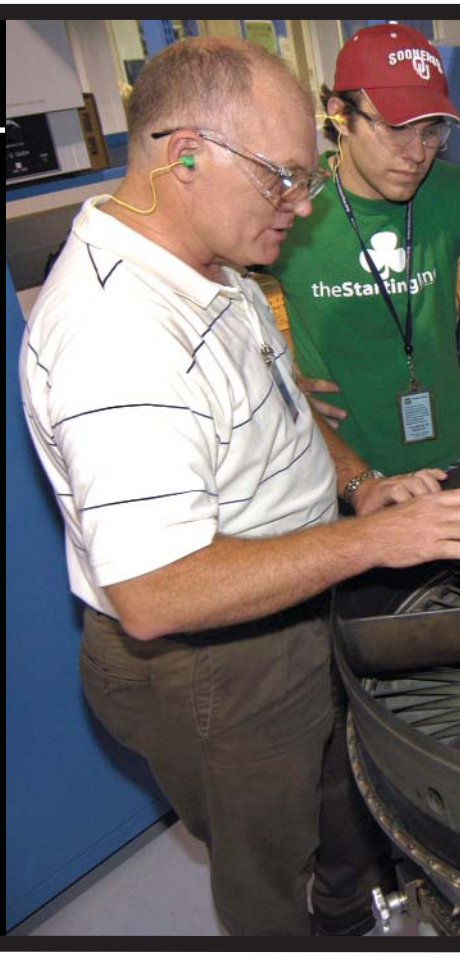
This transition began with Phase I covering the inlet fan; followed by Phase II, the low-pressure turbine; and finally Phase III, the core and high-pressure turbine, said Glen Drebes, engineering team lead, 76th Propulsion Maintenance Group.

This process includes disassembly, cleaning, inspection and reassembly for delivery of a serviceable module to the field.

As the depot becomes qualified to do the repairs, the man hours spent dedicated to these engines will increase from 5,000 in fiscal year 2005 to 119,500 in fiscal year 2009, according to Ms. Hudson and Candace Bentley, program manager, F100 Squadron, 448th Eagle Propulsion Sustainment Group.

Following the 1995 Base Realignment and Closure Commission decision, materiel management and organic maintenance of the F100 engine family was moved to Tinker.

— Oklahoma City Air Logistics Center Public Affairs



Craig Gray, left, shows Tinker Air Force Base personnel Tony Longenbaugh, Larry Contero, and Ron Stevens videoscope possibilities on the F100-229 low-pressure turbine. (AF photo by Margo Wright)

Systems program reaches important milestone

HANSCOM AIR FORCE BASE, Mass. — The Airborne, Maritime and Fixed Station Joint Tactical Radio Systems Program took an important step forward recently that keeps the program both on schedule and on budget.

This key milestone was reached when both contractors performing under the Pre-System Development and Demonstration contract passed the system design review.

The two teams led by Lockheed Martin and Boeing submitted successful designs, setting the stage for the preliminary design review in August.

The joint Navy and Air Force program office is headquartered at Hanscom AFB and led by Col. Maryann Watson.

“The program’s industry partners have developed innovative solutions that appear to meet Joint Services

Aeronautical Systems center delivers new aircraft to Colombian government

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Aeronautical Systems Center delivered a state-of-the-art Boeing 737-700 aircraft to the Colombian government July 2 after several years of close collaboration between the United States and Colombia.

The aircraft, a Boeing Business Jet, will be used to transport Colombia's president, executive branch and other VIPs. It replaces a Fokker 28, which had been in service for more than 35 years, vastly improving reliability, durability and ease of maintenance for long distance travel.

The aircraft's mission can be compared to that of Air Force One — it's called Colombian Presidential Aircraft FAC 0001, and will carry members of the

requirements," said Navy Capt. Matt Kercher, deputy program manager. "We have seen some exciting product development over the past six months."

The contract to produce the expected 12,000 radio units is expected to exceed $2 billion.

— 66th Air Base Wing Public Affairs

Officials tout benefits of Software home-use program

GUNTER ANNEX, Ala. — For about the cost of a month's subscription to an Internet service provider, most Air Force members can get a copy of the software application they are currently using on their office desktops for use on their personal home computers.

The benefit, dubbed the Microsoft Home Use Program, is part of the company's commercial software assurance program and was included in the overall Air Force Microsoft Enterprise License Agreement, which consolidates more than 40 separate license agreements across the Air Force into one.

For a little more than $20 — to cover the cost of shipping and handling — Airmen, civilian employees and certain contractors assigned to eligible units can get a licensed copy of the same software they're using at work for home use.

Although the benefit almost sounds too good to be true, only about 6 percent of eligible participants have actually taken advantage of the program.

The only condition attached with the program is personal usage rights are tied to continued employment with the Air Force and ends with termination of employment or expiration of the Air Force's enrollment in Software Assurance.

Complete program details and eligibility requirements can be found online at https://www.gunter.af.mil/contracting/microsoftea/homeuse.aspx.

To get the program code needed to purchase the software on the program's Web site, people need to contact their command or organization's software benefits administrator.

A complete list of administrators can be found at https://www.gunter.af.mil/contracting/microsoftea/documents.aspx (click on Air Force MS Enterprise Agreement).

— Operations and Sustainment Systems Group Public Affairs

executive branch of government abroad to conduct foreign relations activities and, most importantly according to Major Kaighen, for the executive branch to get to outlying regions of the country to support the people of Colombia.

The delivery took place at DeCrane Aircraft System Integration Group, PATS Aircraft LLC, in Georgetown, Del., six months after signing a contract to carry out the modifications.

The pilots who flew the aircraft from Delaware to Bogotá, Colombia, called the trip a "dream ride" after the approximately five-hour flight. They said the ride was "smooth, quiet and beautiful."

— Aeronautical Systems Center Public Affairs

A Boeing Business Jet, delivered July 2 to the Colombian government by Aeronautical Systems Center at Wright-Patterson Air Force Base, Ohio, sits on the runway at a paint facility. (AF photo by Brian Lapp)

Coming together

Heritage Conference pools wisdom, experience

By 1st Lt. Lea Chambers
AFMC Public Affairs
Wright-Patterson AFB, Ohio

Men who are the keepers of decades of Air Force history and wisdom met in a crowded auditorium Thursday to discuss current and future issues facing Air Force Materiel Command.

But it wasn't just business that brought 14 former leaders together with Gen. Gregory S. Martin, AFMC commander and Lt. Gen. Richard V. Reynolds, AFMC vice commander for the annual three-day Heritage Conference at Wright-Patterson Air Force Base, Ohio — for some it was about seeing old friends.

Many expressed appreciation at being given the opportunity each year to be brought up to speed on what is happening in the Air Force and AFMC specifically.

It's a chance to see authoritatively what's happening in the command, said Lt. Gen. (ret.) William Thurman, a decorated combat pilot and former Air Force Systems Command vice commander.

General Thurman is a 1954 graduate of the U.S. Naval Academy and his awards

include the Distinguished Service Medal, Defense Superior Service Medal, Legion of Merit with two oak leaf clusters, Distinguished Flying Cross with oak leaf cluster, Bronze Star Medal, Purple Heart and Air Medal with four oak leaf clusters.

Among topics discussed by the group were the state of the command, Base Realignment and Closure, Air Force Research Laboratory transformation, expeditionary logistics and civilian health and fitness.

The Heritage Conference provides these leaders a unique opportunity to share lessons learned with the current command leadership.

The event gave General Martin and General Reynolds a chance to showcase the command to the former leaders who shaped not only AFMC but also its predecessors, Air Force Logistics Command and Air Force Systems Command.

"The Heritage Conference allows General Martin and his staff to connect to the bigger community. Not just retired generals but to industry as well," said Lt. Gen. (ret.) Charles Coolidge, who served as AFMC vice commander from February 2000 to January 2004. "There's a good crossflow of ideas and it's a good opportunity to build a partnership between industry, community and command leadership."

Before coming to AFMC, General Coolidge served on the Joint Staff and was the Joint Staff representative to the U.S. - U.S.S.R. Standing Consultative Commission, which met biannually in Geneva. He is also a command pilot with more than 4,100 flying hours.

The conference was also an opportunity for former commanders to assess current leadership. "The command has flourished under General Martin," said General Lyles, who was a member of AFSC before the merger that created AFMC and who also served as vice chief of staff of the Air Force before taking command at AFMC.

"He's taken everything in the command to a new level. It's great to see where the command is going."

The most important aspect of the conference is the exchange of ideas, said Lt. Gen. (ret.) Ken Eickmann, who served as the Aeronautical Systems Center commander from May 1996 to June 1998, during which he also served as acting AFMC commander for a short time.

The state of Oklahoma declared July 11, 1995 "General Ken Eickmann Day" in recognition of his leadership and assistance to federal and state rescue and recovery efforts following the April 19, 1995, bombing of the Alfred P. Murrah Building in Oklahoma City while he was serving as commander of the Oklahoma City Air Logistics Center.

Feedback going to and from the commander in open discussions during the conference provides all participants with viewpoints and knowledge they didn't have before, General Eickmann said.

"There's a sense of patriotism that still beats through our hearts," said General Coolidge.

"The conference is all about asking, 'How can I help? How can we as a group help the Air Force?'"

"It's great to spend time with current leadership, peers, and even my mentors," said General Lyles. "There are two guys here who have known me since I was a captain. This is what mentoring is all about."

"There's a sense of patriotism that still beats through our hearts," said General Coolidge. "The conference is all about asking, 'How can I help? How can we as a group help the Air Force?'"

(Left) Attending this year's Heritage Conference were: (Back Row) Lt. Gen. Charlie Coolidge, Lt. Gen. Ken Eickmann, Lt. Gen. Charlie Searock, Lt. Gen. Stu Cranston, Dr. Dan Stewart. (Middle Row) Lt. Gen. Chuck McCausland, Gen. Les Lyles, Gen. George Babbitt, Lt. Gen. Bill Thurman, Lt. Gen. Dave Teal. (Front Row) Gen. Al Hansen, Gen. Bill McBride, Gen. Gregory Martin, Gen. Earl O'Loughlin, Gen. Ron Yates. The men attended the annual conference at Wright-Patterson June 22 — 24. The Heritage Conference brings together current and former leaders of Air Force Materiel Command and its predecessors for discussion on issues facing the command.
(*AF photo by Al Bright*)

Rocketing t

The quest to develop an affordable, responsive small launch vehicle capable of placing a small satellite into a low earth orbit moved a few steps closer at the Edwards Research Site, Edwards Air Force Base, Calif.

By Ranney Adams
AFRL Public Affairs
Edwards AFB, Calif.

Multiple tests of a small rocket engine and a second test of a hybrid rocket motor have been successfully completed on the Air Force Research Laboratory's Test Stand 2-A located at Edwards.

The test stand sits on Leuhman Ridge overlooking Edwards's Rogers dry lake bed and the surrounding Mojave Desert.

The multiple test series ran from one to 30 seconds in duration and an initial review of the data indicated that program test objectives were met.

AFRL readied the operational test stand's North Test Bay for the contractor, Microcosm, marking the first time a hydrocarbon and liquid oxygen engine had been tested on the stand since the Apollo F1 rocket engines tests were completed in the early 70s.

The Air Force Falcon Small Launch Vehicle program is a 36-month long Phase II effort to develop and demonstrate an affordable and responsive space lift launcher, capable of placing a small satellite, weighing 1,000 pounds, into a circular

The second in a series of hybrid rocket motor firings on Air Force Research Laboratory's Edwards Research Site Test Stand 2-A provided a preview of future small satellite launch capabilities and missions. The tests were part of the Air Force Falcon Small Launch Vehicle Program to develop and demonstrate an affordable and responsive space lift launcher. (AF photo by Ron Fair)

to Space

A series of rocket engine firings capable of generating 20,000 pounds of thrust was recently completed at Edwards AFB, Calif., on Air Force Research Lab rocket development facilities. (AF photo by Ron Fair)

orbit at an altitude of 100 nautical miles.

According to company officials, Microcosm's test engine has been scaled up from a 5,000 pounds of thrust engine.

The current test series was conducted with an engine designed for 20,000 pounds of thrust using a new injector and ablative thrust chamber.

Its propellants were liquid oxygen and standard Jet-A fuel, a commercially available aircraft fuel.

The hybrid motor, which uses a rubberized fuel and liquid oxygen to create approximately 23,500 pounds of thrust was successfully tested.

The test ran for the planned duration of 120 seconds and an initial review of the data indicated the program objectives were met.

As the program progresses, Falcon/SLV candidates will be selected for additional development efforts that will culminate in a launch demonstration.

In future plans for the program, the government will select one or more teams to continue development of the SLV design for an actual flight demonstration.

The activation of the Test Stand 2A and its two test bays followed its rededication Jan. 14, 2004, refurbishing the Apollo era test stand into one of the nation's most modern high-pressure liquid rocket engine test stands.

That date was used by President Bush to announce the national space goal of Moon, Mars, and Beyond.

Test Stand 2-A is the Department of Defense's most capable rocket-component development facility, able to test the family of rockets proposed for the program.

AFRL's Edwards Research Site encompasses 65 square miles of Edwards AFB.

*The **Air Force Falcon Small Launch Vehicle** program is a 36-month long Phase II effort to develop and demonstrate an affordable and responsive space lift launcher capable of placing a small satellite, weighing 1,000 pounds, into a circular orbit at an altitude of 100 nautical miles.*

Rapid Response

RoadRunner demonstrates revolutionary military space capability

By Michael P. Kleiman
AFRL Space Vehicles Public Affairs
Kirtland AFB, N.M.

In the near future, "responsive satellites" will provide U.S. and allied ground forces with a revolutionary tool that delivers imagery or other information on enemy operations directly to the joint forces commander.

The cutting-edge technologies required to provide this futuristic capability have already been developed by military scientists and engineers at Kirtland Air Force Base, N.M., and will soon be demonstrated by the TacSat-2/RoadRunner satellite.

RoadRunner, developed at Air Force Research Laboratory's Space Vehicles Directorate at Kirtland, and named after the New Mexico state bird, resulted from a DoD initiative to improve the responsiveness of all facets of space mission execution, and to provide space capabilities directly to the joint warfighter in the field.

The responsive space concept involves three key capabilities: responsive satellites, responsive launch, and responsive operations.

Currently, it takes more than a decade to design, develop, and test a typical surveillance satellite.

It then requires about a year to prepare and launch the spacecraft into orbit, and a few more months to checkout the satellite before turning it over to a cadre of operators working from control centers around the world. Most military satellites often perform multiple functions and are designed to operate for about 10 years.

RoadRunner is pioneering the way to responsive space capabilities — satellites that will be planned, assembled, and launched in well under a month.

"This will revolutionize the way space systems support our deployed forces," said Dr. Bob Pugh, technical advisor, Joint Warfighting Space Program Office.

These single-purpose spacecraft will operate for a year or more and will only cost about 10 percent of the price tag for today's surveillance satellites.

In many cases, they will be controlled by joint forces in the field, he said.

The TacSat-2/RoadRunner spacecraft represents a partnership between the Air Force Research Laboratory Space Vehicles Directorate, the DoD Space Test Program (Space and Missile Systems Center Detachment 12), the Naval Research

(Right) A researcher with Science Applications International Corp., San Diego, Calif., performs an evaluation of the RoadRunner's optical telescope in March. The responsive space concept involves three key capabilities: responsive satellites, responsive launch and responsive operations.

Currently, it takes more than a decade to design, develop and test a typical surveillance satellite. RoadRunner is pioneering the way to responsive space capabilities — satellites that will be planned, assembled and launched in well under a month. (Photo courtesy of Neal Peck)

"One day we will get to a point where a satellite launch is just another sortie." – Neal Peck, RoadRunner program manager

Laboratory, the Army Space Program Office, Air Force Space Command, the Space Warfare Center and NASA to take the first steps in demonstrating the responsive space capability.

"We want to make space useful for everyone in the U.S. military," said Neal Peck, RoadRunner program manager. "It is a significant challenge, but we are working toward it one step at a time."

"Similar to the speedy characteristic of its namesake, this experimental satellite will have gone from concept to launch-ready within 18 months," said Mr. Peck.

Following liftoff, the 900-pound satellite will be placed into circular orbit approximately 217 miles above the earth. During its six to 12-month mission, several critical experiments will be conducted.

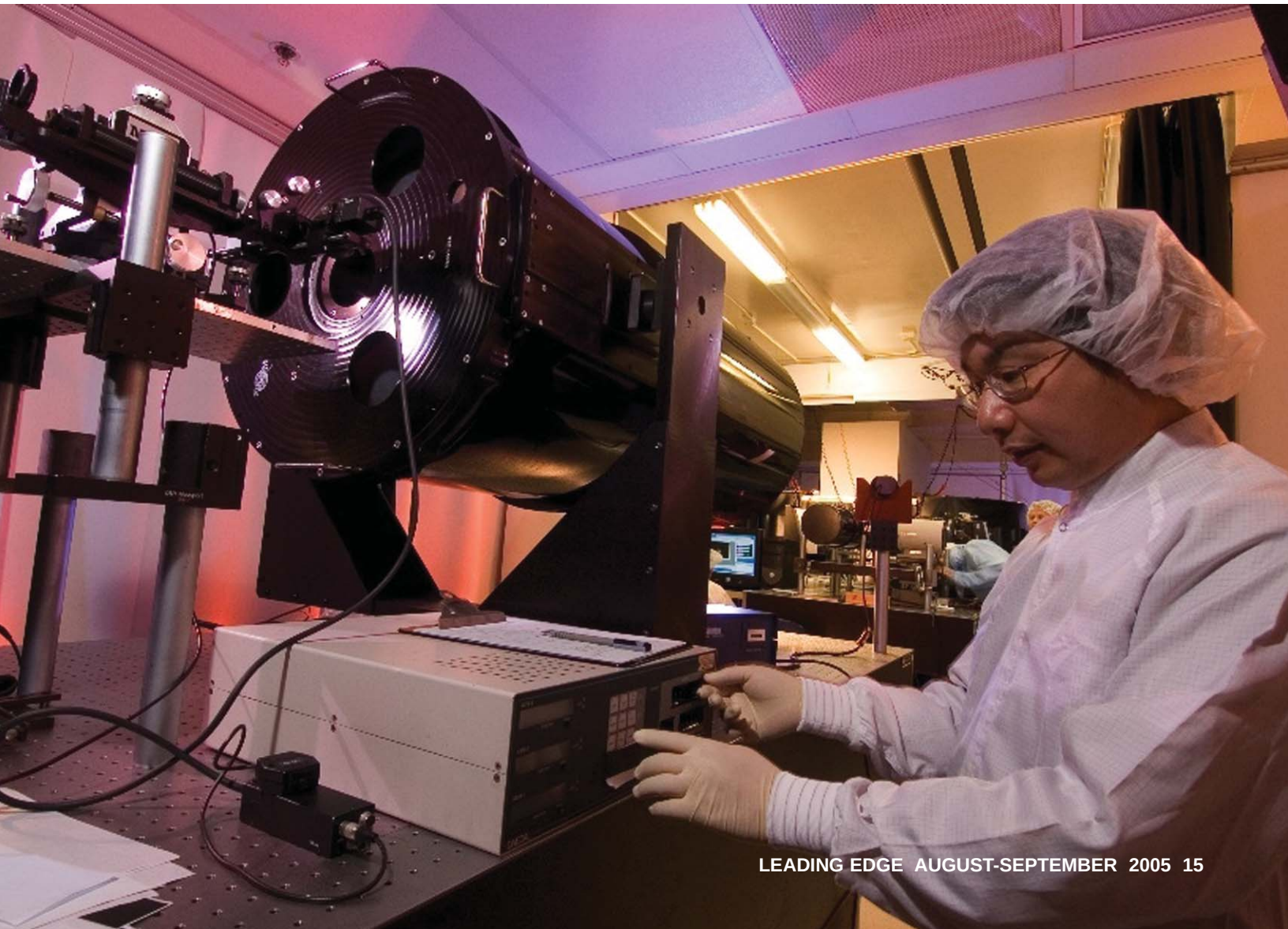
"One challenge is to launch a space system with up-to-date technology. If it takes 10 years to launch (a traditional spacecraft), then the (satellite's) technology is obsolete. With RoadRunner, the technology will be current," said Mr. Peck.

The Space Vehicles Directorate team played a prominent role in developing and integrating many of the experimental payloads comprising the satellite.

"We want to give government personnel hands-on experience with space systems. It is more than just building a satellite; it is also operating one," Mr. Peck said.

This ground-breaking, military responsive space concept demonstration serves as the forerunner for rapid satellite production, launch and operation.

"One day we will get to a point where a satellite launch is just another sortie," Peck said.



Students participating in the Space Scholars Program are able to do hands-on work with different experiments. Program participants Jonathan Black, mechanical engineer (left), and Jeff Whetzal, chemical engineer (middle), prepare composite material for a satellite frame with mentor Aleck Papanicolopoulos, Composite Laboratory manager, Space Vehicles Directorate. (AF photo by Connie Rankin)

Summer program attracts some of America's top tech students

By Michael P. Kleiman
AFRL Space Vehicles Public Affairs
Kirtland AFB, N.M.

Thirty-one of America's exceptional senior undergraduate and graduate students working on technical degrees will spend their summer at Kirtland Air Force Base, N.M., attending the sixth annual Space Scholars Program, sponsored by the Air Force Research Laboratory, Space Vehicles Directorate.

Eight additional participants attend the program at the organization's detachment at Hanscom Air Force Base, Mass.

This unique summer program allows students, assisted by permanent staff scientists and engineers serving as program mentors, to conduct original research projects to enhance Air Force technology, as well as creates a potential recruiting pool for future hires.

"The program offers benefits for everyone involved," said Dr. R. Scott Erwin, Space Scholars Program coordinator. "For the students, they are able to participate in exciting research with some of the pre-eminent scientists and engineers in the United States and to get perspective and experience on how research and development results are transitioned and incorporated into larger applications."

"For the Air Force, we are reaching out to the next generation of scientists and engineers that will discover, develop and implement the technologies of the future," he said.

A list of the endorsed research areas appears on the program Web site in January, and several weeks later, completed applications arrive.

"The goals of the Space Scholars program are to attract and retain the nations 'best and brightest' students into research and development positions in space-related science and engineering fields, to provide a tool for recruitment for the Directorate and to offer our staff the opportunity of working with researchers on projects that support our mission," said Dr. Erwin.

"My experience as a Space Scholar in 2000 exposed me to the wide range of research being pursued by the Air Force Research Laboratory's Space Vehicles Directorate, as well as the talented people performing the research," said Dr. Seth Lacy, who serves with the Space Vehicles Directorate.

"This heavily influenced my considerations when looking for a position post-graduation."

People who want to know more about this program, can visit the Web site at www.vs.afrl.af.mil/SpaceScholars/.

Sealing the Deal

Contingency contractors move fast to support the warfighter

By Mary Wagner
72 ABW Public Affairs
Tinker AFB, Okla.

Armed with contingency kits that include such items as computers and rapid reaction templates, contingency contracting officers (CCOs) are ready to deploy anywhere and anytime.

At Tinker Air Force Base, Okla., the 72nd Contracting Squadron trains and equips enlisted, military and civilian personnel to provide expedited contracting support for contingency operations and local emergencies through their contingency contracting training program.

The 72nd CONS contingency contracting cell has built upon that successful foundation over the past few years to prepare more than 60 officers and enlisted troops to deploy.

According to Tech. Sgt. Gary Smith, chief of the Contingency Support Cell and unit deployment officer for the 72nd CONS, CCOs in the field are the "sole individuals in that environment that are authorized to bind the government and obligate appropriate funds." Because of this key responsibility, he said CCOs must ensure warfighter needs are met while being "good stewards of our tax dollars."

"CCOs must understand and meet the needs of the warfighter," Sgt. Smith said. "CCOs may find themselves in some pretty bizarre situations, and the training program prepares them to evaluate all the variables and make the best decisions to support the warfighters."

CCOs must provide deployed commanders with a clear and correct answer when asked how quickly needs can be filled. CCOs often have to "sift through a myriad of acquisition and fiscal laws" while in the field despite the logistical difficulty of doing so. According to Col. Robert Bruce, commander of the 72nd CONS, this necessitates the need to provide the detailed and focused CCO training program.

"Our goal is to provide the best support to the on-scene or deployed commander by training and equipping CCOs to deliver superior contracting support," Col. Bruce said. "When they get a Tinker CCO, they know they are getting an individual who is among the best trained."

To ensure the contracting officers are ready, the 72nd CONS created a knowledge management system comprised of briefings, lessons learned, training scenarios and after-action reports. Sergeant Smith said they try to incorporate real-world experiences into training to teach CCOs the unique situations they might encounter.

"The kit has everything in there you could need," Sergeant Smith said. "It gives us the ability to be dropped into a particular area and be able to do what we need to."

Colonel Bruce said he wants his unit to be "a flagship for AFMC contracting squadrons." According to him, "The 72nd Contracting Squadron's program goes above and beyond to keep CCOs proficient and fully prepared to respond."

Contracts for deployed services such as runway repairs or buying fire extinguishers is the demand of the moment for, from left, Tech. Sgt. Shela Colon, Capt. Mark Watson and Capt. Doug Leedy during June training. (AF photo by Margo Wright)

BUFFING THE BUFF

Members of the 96th Ground Combat Training Squadron wash underneath the tail of the B-52G Stratofortress bomber at the Air Force Armament Museum at Eglin Air Force Base, Fla. The squadron took on the project as part of the adopt-a-plane program at the museum and for a wingman program. The squadron plans to renovate the exterior of the plane, affectionately known in Air Force parlance as the Big Ugly Fat Fella, or variations there of (BUFF). The adoption would make the squadron responsible for general maintenance.

By Senior Airman Mike Meares
96th ABW Public Affairs
Eglin AFB, Fla.

When "fire and brimstone" rains from the sky, the B-52 Stratofortress is somewhere close — at least 40,000 feet away.

The 96th Ground Combat Training Squadron at Eglin Air Force Base, Fla., says it shares some of those B-52 characteristics, so it decided to adopt the B-52G bomber named "El Lobo" at the Air Force Armament Museum at Eglin.

There is a personal tie to this plane for Senior Master Sgt. James Walsingham, the operations superintendent for the squadron.

Sergeant Walsingham was asked to head up the project that would adopt a plane at the museum as part of its wingman program. The adoption would make the squadron responsible for cleaning, painting and general maintenance of the plane to ensure a longer life for visitors.

"I couldn't believe my eyes when I saw it sitting here," he said. "I spent countless hours with this plane."

During his days as a staff sergeant on the flightline at Barksdale Air Force Base, La., Sergeant Walsingham was one of more than 250 security police Airmen who stood guard over the B-52s assigned to the 2nd Bomb Wing, under Strategic Air Command.

"It didn't matter what the weather was like, either," he said. "I can remember standing guard with lightning popping all around the flightline."

The Airmen had to stand inside the "No-Lone Zone," no closer than 10 feet and no farther than 60 feet away from the

plane. They were responsible for all 159 feet and 4 inches of the aircraft's length. The wingspan was 185 feet from tip to tip. If there was a violation of the restricted area, it required 15 Airmen to respond to one aircraft within a five-minute time frame.

In 1991, Sergeant Walsingham sat in a patrol car and watched as B-52s took off, loaded with conventional weapons, on their way to kick off the air campaign for the Gulf War.

"I watched history being made there," he said. "I never thought I would see the plane again once I left Barksdale."

Now, it will take him and the squadron a lot of hours to keep it clean as they are tackling the task of maintenance. They want to take the wingman concept to the next level.

"We want to be productive," he said. "Instead of going bowling or something like that, we are the smallest unit taking on the biggest plane."

They plan on working on the plane in several different phases. Cleaning the B-52 was the first priority. The nose of the plane is the next step. The paint has bubbled up and started chipping off in large chunks. Once the nose is complete, the tri-colored plane will get a new paint job.

Painted for the Desert Storm mission, the tan, green and black pattern will eventually be replaced.

The small squadron is using the largest aircraft in the Air Force arsenal to grow as a unit.

Senior Master Sgt. James Walsingham, 96th Ground Combat Training Squadron, pressure sprays mildew built up on the fuselage of the B-52. After cleaning the exterior of the plane, future projects include plans to fix the nose of the aircraft, followed by a paint job. (AF photos by Senior Airman Mike Meares)

Photos and stories
by 1st Lt. J. Elaine Hunnicutt
AFMC Public Affairs
Wright Patterson AFB, Ohio

(opposite page) The minarets are a symbol of Herat's prominence and used to act as a gateway into the city. The minarets used to be covered in tiles made at the Herat Blue Mosque Tile Factory, but years of fighting from the Soviets, to Mujedin, have shaken loose most of the tiles.

A Soldier renders aid following a roadside accident during a routine convoy between Shindand and Herat.

DEPLOYMENT AFGHANISTAN

Arsenal for War on Terror includes more than weaponry

This report is not specifically an AFMC or Air Force story, but a glimpse of the human story behind U. S. military operations in Afghanistan, from which most people are far removed. The story and photos here are intended to bring into view the terrain, population and culture of Afghanistan, as well as to put a face on the U. S. military and some of the population that is benefiting from the military's reconstruction efforts. Since her deployment, Lieutenant Hunnicutt has moved to a new assignment at Tyndall AFB, Fla., with Air Force Special Operations Command.

Afghan girl brings flowers to the Farah Women's Center grand opening.

I still see the face of the little girl who held my hand and opened my heart in Afghanistan. I don't know her name, but I will never forget her smile or how she led me around the orphanage where she lived in Herat. She changed the way I see the world and opened my eyes to what is really important in life.

I returned from a deployment to Afghanistan with the Army in April. I was one of four Air Force public affairs representatives in all of Afghanistan. I lived in tents, wooden rooms, old Soviet barracks, lush houses and military dorms. I experienced a wide variety of living conditions and was always on the move.

I was responsible for the media coverage of the provinces of Herat, Ghor, Badghis and Farah in Western Afghanistan and reported to the Combined Forces Command–Afghanistan in Kabul via my Mobile Public Affairs Detachment commander in Kandahar. I began my tour in Kabul for the CFC–A and was later asked to open a new public affairs office out west, as the mission began to shift into the hands of the International Security Assistance Force, under NATO.

The experience was unforgettable, and I was blessed with terrific leadership at all levels, and a talented NCO. The area I was moved to bordered Iran and we often received media queries about border activities, in which we had no role.

Regional Command West comprised more than 2,500 troops, including a large number of Afghan National Army soldiers. Other areas of interest to the media out west included reconstruction, security, narcotics, anti-coalition activities and the eventual transition with ISAF. We had a good working relationship with the Afghan National Police and local government, which aided in getting reporters balanced interviews.

I was responsible for publicizing the efforts of the Provincial Reconstruction Teams in the west. We had a PRT in Farah and Herat. The teams would go into rural villages and assess what was needed to improve the lives of the villagers. The most common construction projects that were funded included infrastructure, such as schools, medical facilities and wells. Once I set up shop, I was inundated with international media visits

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by New York Times, Washington Post, German TV, Rome, British, Eastern European and South American print media. My biggest struggle was learning to work with the local media. Locating the media was the first task, then determining the best means of communicating and finally finding opportunities that were appropriate for them to cover. I spent many days discussing limitations, expectations and dreams with these wonderful forward-thinking Afghanistan journalists. These men and women will lead their country into a better tomorrow. They are educated and excited about the future.

Farah Provincial Reconstruction Team members dine with local Afghans during the team's inspections of the villages. The teams evaluate what work needs to be done for the betterment of the entire community.

You have to understand that I was in Herat, a large cosmopolitan city that was known for culture and scholars. This place had been torn apart by the Soviets and the Taliban. The Taliban was the most devastating force because they took the culture and art of the city and destroyed most of it. The uneducated, often illiterate, Talib fanatics ripped at the fabric of the city's personality and tried to destroy it.

I found the strength expressed by the people refreshing. The men and women I knew are strong and brave. They are educated and have sacrificed to educate their children in underground schools during the reign of the Taliban. When I asked one of our interpreters why he would risk sending his 8-year-old daughter to an underground school, disguised as a sewing class, he replied, "We feared her growing up ignorant more than we feared death as a repercussion for our actions." I was taken back by his comment and the constant pride that he showed for his family. "I am sending my wife to driving lessons, and I will soon buy a car for our family ... she will drive!" This is simply amazing to me and not what I had expected to hear from the Afghan men.

(continued page 24)

Children crowd around the back of a pick-up truck in Kandahar as soldiers distribute school books, clothes and toiletries sent from their families in the states. Most soldiers don't ask for items for themselves; they ask their families to send things they can pass out to the children instead.

Army Lt. Col. Jenny Caruso, Task Force Longhorn deputy commanding officer, attends the opening of the Farah Province's Women's Center. More than 600 women were in attendance as the coalition and US Agency for International Deployment were honored for their efforts to make the center a reality.

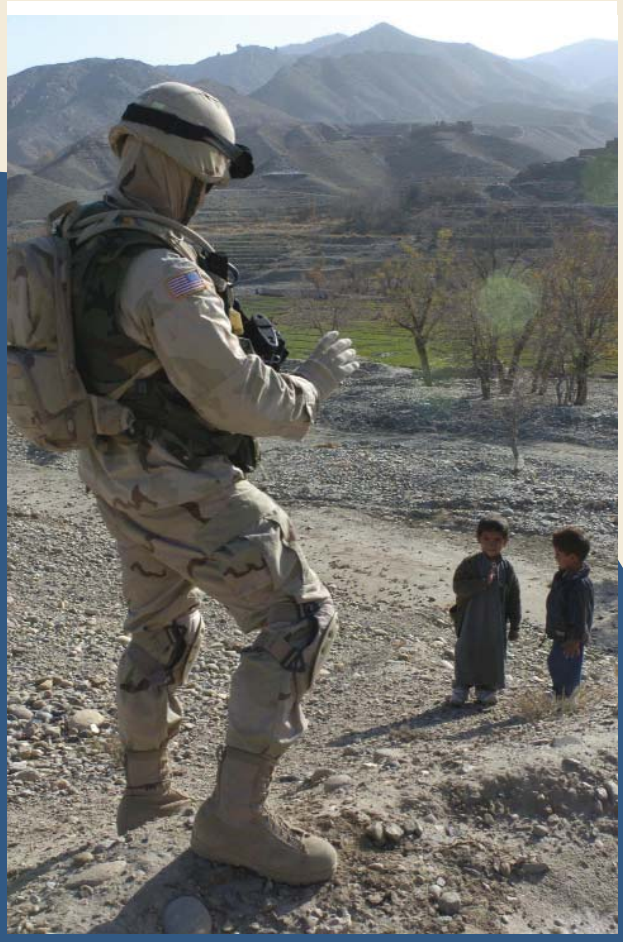
More than 600 women attended the opening of the Farah Women's Center in April in honor of International Women's Day. This was a big step for women in this deeply religious area, where women are rarely seen in public. The center will provide trade-skill training, counseling and family classes for the women. The Farah Provincial Reconstruction Team, in conjunction with US Agency for International Development built the facility.

A boy awaits the distribution of toys and clothes during Operation Shoe Fly, a community outreach effort by the 214th Aviation Regiment.

Afghan boys stand ready to take care of guests in their father's home. It is tradition that sons, not daughters, serve guests in the Afghan home. A cloth is laid on the floor by the boys, water and towels are brought out to wash the hands of the guests and then they serve the food. Typically meals are served on the floor on giant platters that the guests share. Flat bread, rice, lamb and fruit are standard Afghan fare.

More than 600 women attended the opening of the Farah Women's Center in March in the Farah Province, primarily a rural and traditional population.

I covered stories about everything from deworming children and animals to delivering massive amounts of humanitarian aid to remote snowed-in locations via helicopters. I held the hands of burn victims and women prisoners; I ate with warlords; taught refugees and orphans how to thumb wrestle. I was there for the first Afghan presidential inauguration, a women's center opening in the Koran belt, the groundbreaking of a girl's orphanage, the Italian takeover of the American Provisional Reconstruction Team in Herat. I sent home stories to hometown papers on the volunteer work and amazing stories of young soldiers, sailors, airmen and Marines. These people spent their off-duty time figuring out ways to provide running water and heat at the local orphanages, how to get books and clothes for the children, as well as building and repairing schools.



A soldier with the force protection element waves at children in the remote village during Operation Shoe Fly.

I covered medical evacuations of people who had been blown up by mines, children who inadvertently drank pesticide, the equivalent of a nerve agent, and the evacuation of burn victims on the doorsteps of death. The doctors and commanders who aided these people were true heroes.

The people are amazing, kind and loving. They value their guest above their own family. I have never felt so welcomed. However, it was not always that way. For the most part, men respected me and even applauded me for being independent. You did encounter, from time to time, the occasional "fundo," as a good friend of mine at the State Department liked to refer to fundamentalists. For the most part, I walked the streets and never felt at risk. We all had weapons and went out in groups. There were only a few times that I felt unwelcome and that was usually in rural areas or near religious centers. When I walked through the markets, I was always followed by groups of Afghans, both men and women. They would follow me in awe and watch me

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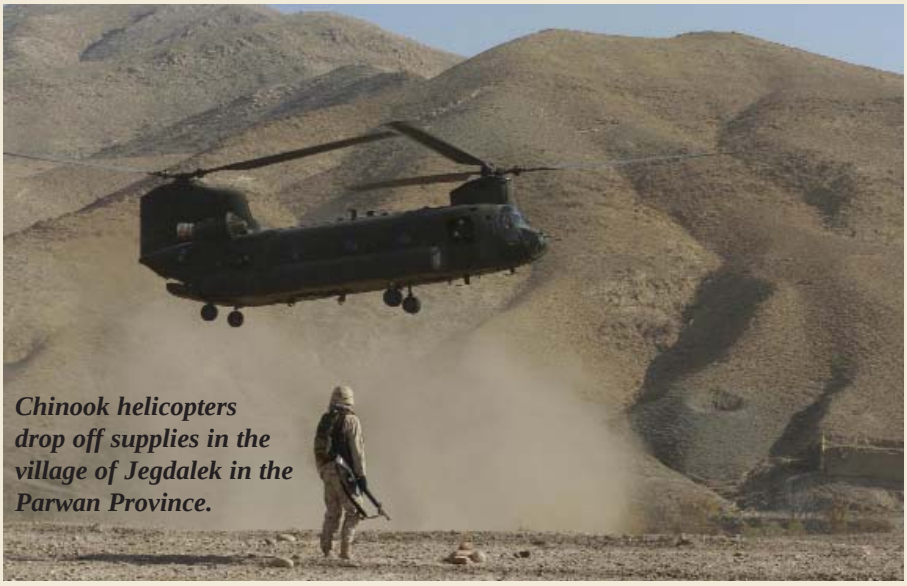
A coalition soldier puts new socks and shoes on a mangled foot of an Afghan boy during Operation Shoe Fly.

Two little girls look on as other children receive aid during Operation Shoe Fly aid drops in Parwan Province.



Chinook helicopters drop off supplies in the village of Jegdalek in the Parwan Province.

Operation Shoe Fly

The crewmembers of the 214th Aviation Regiment started Operation Shoe Fly several rotations earlier, but so many packages were being sent from around the world that crewmembers in successive rotations kept it going.

The rumor is that one of the crewmen was a father and he told his little girl thievery day he flew over villages in Afghanistan and could look down and see children in the villages running and playing and that they did not have any shoes. The little girl became sad and said then I don't want my shoes give them all of my shoes to wear." The father was so overwhelmed by his daughter's response that they started collecting shoes for his fellow soldiers to distribute during their regular missions. Because of security and mission restrictions, they couldn't stop in every village. So, then they began throwing shoes, toys and clothes for the children out of the back of the Chinooks near the villages. An Afghan woman from Duxbury, Mass., Razia Jan or "Mama Raz Jan," read about the outreach effort online and began collecting items. She later paid her way to Afghanistan and was taken to the village. She was said to have provided every child in that village with a pair of shoes. She had shipped more than 80 large boxes to the soldiers for distribution in Jegdalek. She left Afghanistan when she was a child. She describes this now war-torn land as a "Paris of the Middle East." It broke her heart to see her families, houses in shambles and the Afghan children hungry and illiterate, begging on the streets of her country. "There used to be beautiful gardens and we could even wear mini skirts," she said.

Mine casings are more plentiful than necessities, such as shoes.

Girls leave their shoes outside a tent that serves as their makeshift classroom.

Landmine casings are piled in an open-air weapons cache. The landscape of Afghanistan is littered with land mines and weapons from the Soviet-Afghan war.

The author and children from the Herat girls orphanage pose for pictures. A new orphanage for the girls is being constructed thanks to the Herat Provincial Reconstruction Team, a Coalition Force Reconstruction effort. More than100 girls currently live in a four-room house.

shop. One woman pointed me out to her little girl and followed me in her burka for half a block. My interpreter told me that she admired me and was watching me with approval. Afghanistan wasn't always a fundamentalist land filled with blue burkas ... it used to be the "Paris of the Middle East," according to people I have met from Afghanistan. Many of those people left during the Soviet invasion or later during the Taliban's reign. Those same people are returning today and are working to make a better future for the children of Afghanistan.

My roommate in Kabul was one of 50 combat linguists; she was on a two-year Army hitch with financial incentives. She plans to take the money and return to her Air Force ROTC program at San Diego State University next year. I was impressed by her energy and excitement. She was so humbled to be able to return and help her countrymen and long-lost relatives; she hopes to return after she is commissioned.

Another linguist I spoke to had left Afghanistan with his family when he was very young. "I remember walking by this house in Kabul on my way to school when I was a child, and I was scared ... the Talibs lived there. I didn't know why I was scared, but we later moved away from Afghanistan," he said.

My interpreters, visiting journalists, the Afghan children, State Department and aid agency workers all helped me piece together that place and the people. Sometimes I would wake up in a mental and emotional rut; I would get up, get a car and go downtown. I wanted to see the people and have the reality of why I was there slap me in the face. I wanted to see the people in the streets missing limbs, to see the women in burkas shopping in the markets, to see children begging for food for their families. I wanted to be reminded of all this and realize how insignificant my own insecurities and gripes were. These little excursions every few days energized me and made me want to change things for the better. I am sure the little girl from the Herati orphanage will walk in my memories throughout the remainder my life. She reminds me why we fight. The little girl in Afghanistan is no different than the little girls in Iraq ... we fight for them as we do the future of all of our children. I hope, someday those little girls will have the opportunities to be doctors, lawyers ... leaders who shape their world for the better. I was once asked by a female reporter, "How can you leave your children for a foreign land and carry a gun?" I replied, "Women are still abused and restricted in this country and if me carrying a weapon changes that in any small way and gives them hope of a better tomorrow, then I gladly carry it ... I hope that my children will understand and someday be proud that I came here and stood up for these wonderful people."

Soldiers from the Herat Provincial Reconstruction Team play patty cake with orphan girls following a ground-breaking ceremony for their new orphanage. These orphans are fortunate and do not have to beg on the streets for food. Many Afghan children beg on the streets for food and money to feed themselves and often their families. It was not uncommon to find small children under the age of 5 chasing a car or even hanging on the mirror of a moving vehicle trying to get the driver to give them something. Mothers adorned in burkas could be found sitting in the middle of the sidewalks clutching their sick infants asking for food or money for medicine.

Children in Farah Province, Afghanistan, chase after coalition vehicles from the Farah Provincial Reconstruction Team force protection element with smiles and waves begging soldiers to stay and play. Coalition soldiers from the PRT routinely visit the villages throughout the province and surrounding provinces to assess the needs and well-being of the community; during these visits soldiers pass out donated clothing and toys to the local children.

Afghan women wait in a giant circle with their children outside of a mosque in the Parawan Province until aid is distributed.

"I am sure the little girl from the Herati orphanage will walk in my memories throughout the remainder my life. She reminds me why we fight. The little girl in Afghanistan is no different than the little girls in Iraq ... we fight for them as we do the future of all of our children."

Gen. Gregory Martin bids farewell

Air Force Chief of Staff Gen. John P. Jumper presents Gen. Gregory S. Martin the Distinguished Service Medal (first oak leaf cluster) for General Martin's accomplishments as commander of Air Force Materiel Command. General Martin retired following the assumption of command by Gen. Bruce Carlson. General Martin's salute to AFMC appears on pages 6-7.